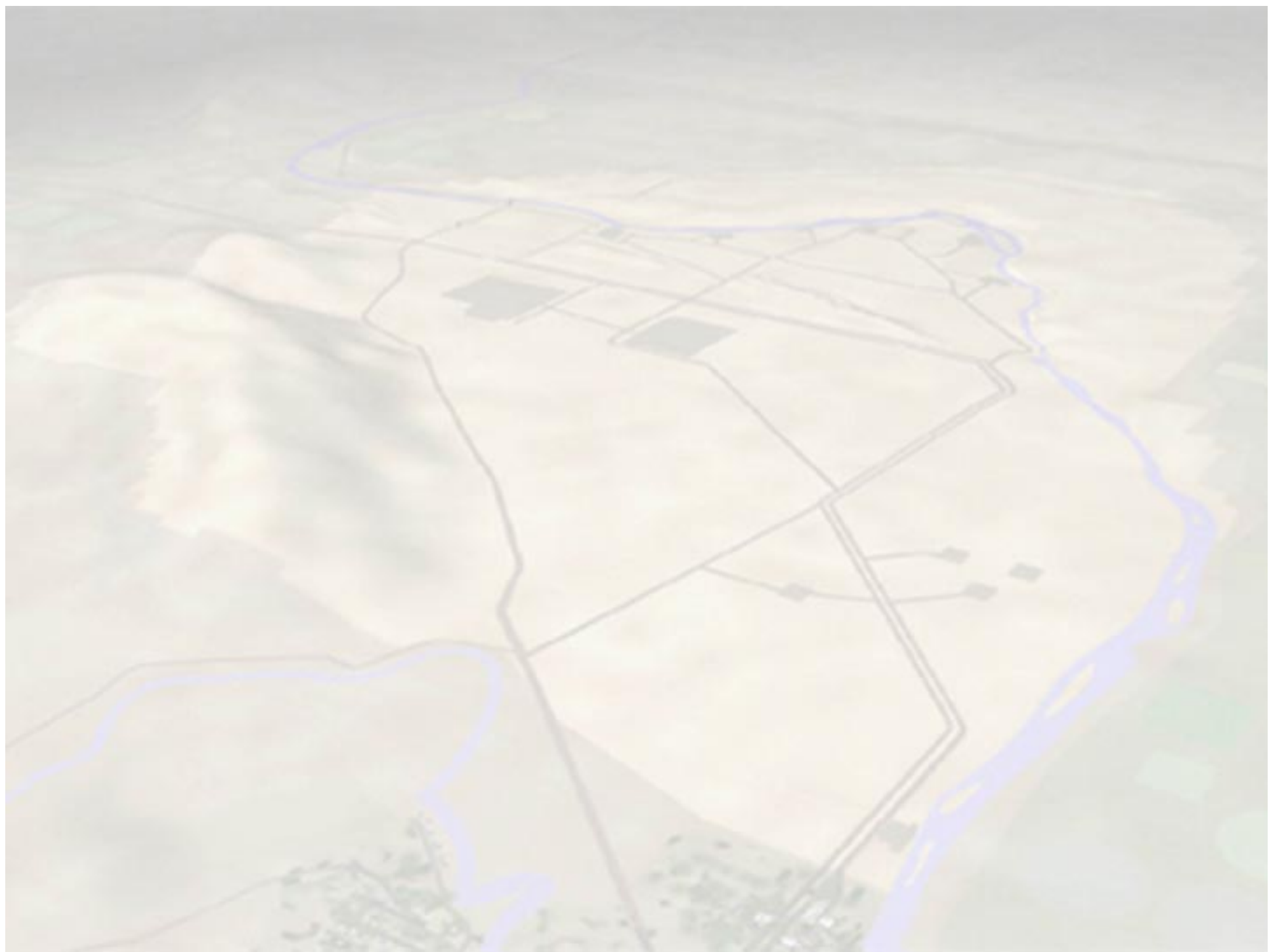


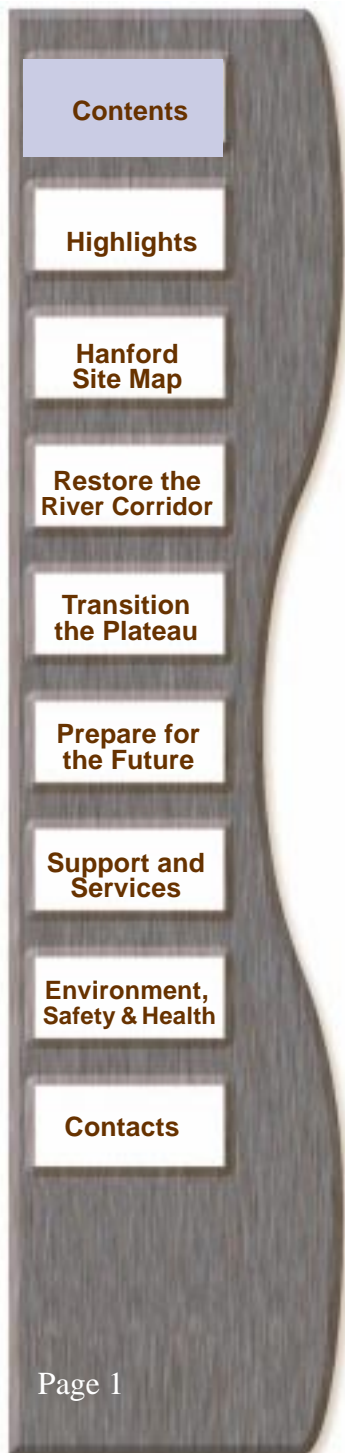


# Cleanup Progress Report

July - September 2002

Prepared by  
**Fluor Hanford**





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## 4th Quarter Fiscal Year 2002 Highlights

- The Fluor Hanford River Corridor Project became the Central Plateau Remediation Project on July 1 and assumed work on scope transferred from the Environmental Restoration Contractor.
- The Central Plateau Remediation Project met an accelerated schedule goal by shipping four spent nuclear fuel assemblies to the Canister Storage Building by September 30.
- Forty-three loads of spent nuclear fuel were shipped out of K-West Basin, double the total shipped in the previous best quarter. These shipments removed more than 202 tons of irradiated uranium and nearly 6.5 million curies of radioactivity from the Columbia River shoreline.
- The Environmental Restoration Contractor team completed Interim Safe Storage by “cocooning” the DR Reactor nearly a year ahead of schedule.
- Fluor Hanford’s Fast Flux Test Facility (FFTF) staff, support personnel and experienced decommissioning subcontract personnel submitted the *FFTF Closure Project Management Plan* to the Department of Energy (DOE). The plan included an estimated project cost and schedule through deactivation and demolition.



*These bull elk are two of the estimated 300 elk ranging on the Hanford Site.*



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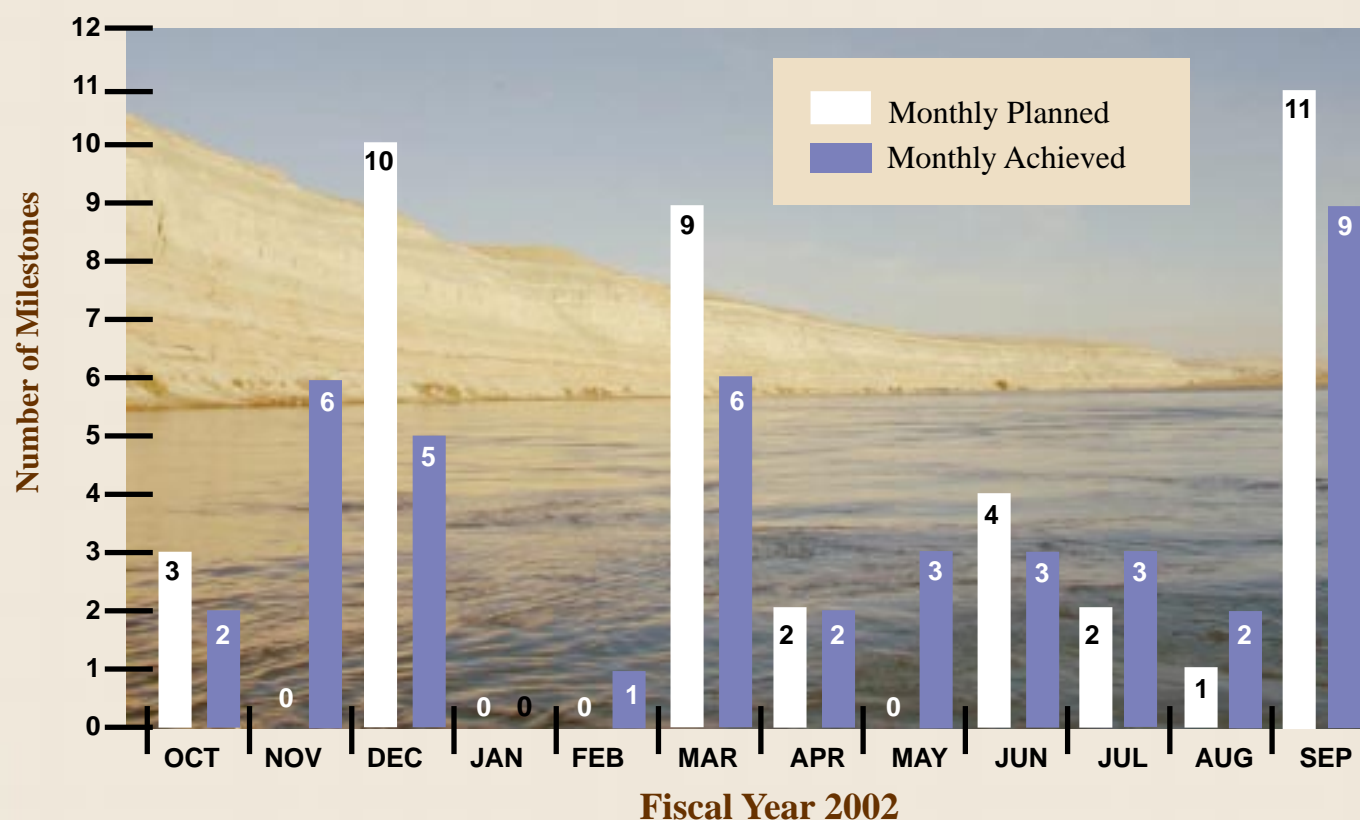
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## 4th Quarter Fiscal Year 2002 Highlights

- All solutions at the Plutonium Finishing Plant were officially “completed” — stabilized — July 29. This Defense Nuclear Facility Safety Board milestone, which eliminated a major risk on the Hanford Site, was completed more than two months ahead of the baseline schedule.
- T Plant personnel made two shipments of Shippingport Reactor fuel to the Canister Storage Building. Liner systems were placed in four of the T Plant Canyon cells to store K-Basin sludge. Plant personnel continue to prepare T Plant for storing sludge from spent nuclear fuel.
- Four shipments of spent nuclear fuel left the 300 Area for storage in the 200 Area.
- The Volpentest HAMMER Training and Education Center earned DOE Star Status under the Voluntary Protection Program.
- Fluor Hanford achieved more than 7.5 million safe work hours this fiscal year and went for more than eight months without a “day-away-from-work” injury. These achievements were recognized by Washington State Governor Gary Locke and the Washington State Department of Ecology.

# Tri-Party Agreement Milestones \*

This quarter, Fluor Hanford met the one Tri-Party Agreement (TPA) milestone that was due. For fiscal year (FY) 2002, Fluor Hanford completed five, and Bechtel Hanford completed 17, TPA milestones.



\* For the graph, milestones for Fluor Hanford, Bechtel Hanford, Bechtel National and CH2M HILL Hanford Group are all charted. The source for the information is a report generated from the Central Milestone Module on Oct 29, 2002. Milestones are counted as complete when the Central Milestone Module has recorded the documentation for completion. For this report, milestones are reported as complete if they are finished on or between Oct. 1, 2001 and Sept. 30, 2002.

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# Hanford Site Map

*Hanford facilities featured in this report appear on this map.*

## 200 West Area

- Central Waste Complex
- Plutonium Finishing Plant
- T Plant
- 224-T Building
- 233-S Building
- 222-S Analytical Laboratories

## Near 200 West Area

- Environmental Restoration Disposal Facility

## 200 East Area

- Canister Storage Building
- 242-A Evaporator
- Plutonium/Uranium Extraction Facility
- B Plant

## 400 Area

- Fast Flux Test Facility

## 100 Area

- Cold Vacuum Drying Facility
- K Basins (for K-East and K-West Reactors)
- C, D, DR, F and H Reactors

## 300 Area

- 309 Building
- 324 Building
- 327 Building
- 337 Building
- 3718 Building
- 618-4 Burial Ground

## Other

- Volpentest HAMMER Training and Education Center

Central Plateau River Corridor



To Richland

Columbia River

N



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# Restore the River Corridor

## Nuclear Energy Legacies

**S**hipping drums — containing small-diameter (less than 8 inches), sodium-wetted piping that was removed from the sodium test loop in the 337B and 3718M Buildings — were shipped to an off-site treatment center.

Requests for expressions of interest were sent to potential vendors for work involving disposition of the residual sodium in the 3718M storage vessel and the 337B Building Composite Reactor Component Test Activity (CRCTA) vessel.

Field work was completed for preparing the 3718M Sodium Storage Tank for sodium residual cleaning.

The sodium cold trap from the 337-B Building was prepared for shipment to an off-site treatment center.

Roof repairs were completed on the 309 Building, which is now in a low-cost surveillance and maintenance condition.

*The river corridor encompasses approximately 210 square miles adjacent to the Columbia River. It is divided into three areas:*

- *the 100 Area, comprising nine shut-down plutonium production reactors and support facilities*
- *the 300 Area, comprising manufacturing and research facilities*
- *the 600 Area, encompassing the mostly vacant land between the 100 and 300 Areas.*



*Operating Engineer Lenny Bultena picks up a drum containing sodium piping removed from the sodium test loop in the 337B and 3718M Buildings. The drums are being loaded onto a truck for transport to an off-site treatment center.*



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## Central Plateau Remediation Project

In the 300 Area, the 310 Treated Effluent Disposal Facility and the 340 Facility Project were successfully transitioned from the Central Plateau Remediation Project to the Waste Management Project on July 8.

The 324 Building staff met the accelerated schedule goal of completing four spent nuclear fuel (SNF) shipments by September 30. The third and fourth shipments were completed seven weeks ahead of the Performance Incentive due date of November 20.

On September 30, the 324 Building received a remote manipulator tool to help clean up contaminated cells. This tool, called the AEA ARTISAN™, has a reach and payload capacity that is nearly ten times greater than the installed manipulators. ARTISAN™ is expected to improve productivity during the cleanout and will be used in deactivating the hot cells of the Shielded Materials Facility in the 324 Building.



*Project personnel weld the shield plug onto a cask containing SNF before it is shipped from the 324 Building.*



*The 11-foot ARTISAN™ arm is a remotely operated tool that will help clean up contaminated cells in the 324 Building.*

*The River Corridor Project became the Central Plateau Remediation Project on July 1, and assumed the work scope transferred from the Environmental Restoration Contractor including the Groundwater Protection Program (formerly Groundwater/Vadose Zone), the 200 Area Facility Disposition Project, and the 233-S Facility Decommissioning and Decontamination Project.*

*The mission of the Central Plateau Remediation Project is to transition the plateau from its current post-operational state to a state where excess facilities and waste sites are cleaned up; and waste characterization, retrieval, treatment, storage and disposal operations are performed in an environmentally sound, safe, secure and efficient manner.*

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## Central Plateau Remediation Project

The cleanout of excess and obsolete equipment in the 327 Building basement is complete.

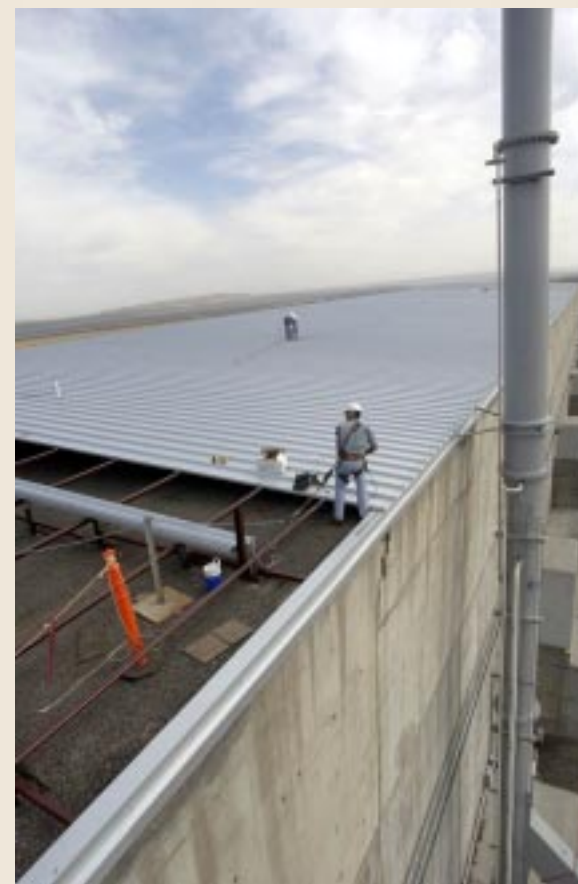
The Accelerated Site Technology Deployment-sponsored ISOCS Gamma Spectrometer — the last of four systems to help characterize the 327 Building hot cells to determine if they can be removed as whole units — was received.

Certification for final closure of the 303K Building was received from the Washington State Department of Ecology under the Resource Conservation and Recovery Act (RCRA).

In the 200 Area, the Equipment Disposition Project completed dispositioning lead from recycled cask cars. A rail flat car was provided to an off-site user, accelerating the disposition of the flat car by six months and saving \$225,000.

At B Plant, roofing contractors erected the roof frame and installed 40 percent of the roof panels.

At the Plutonium Uranium Extraction Facility (PUREX), workers finished roof repairs on the PUREX Tunnels and the 231-Z Building.



*Workers install new roof panels at B Plant.*



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## Central Plateau Remediation Project

The design for the pump system to remove water discovered in the 224-T C Cell was completed. The water and silt were sampled and results indicate that no unsafe or hazardous conditions exist, so that water can continue to be removed.

Workers removed the structural steel inside the 233-S Building, making way for decontamination and ultimate demolition.

Staff members began using the Geoprobe and cone penetrometer, drilling equipment used for establishing shallow boreholes. The boreholes are used to sample the air found in the soil for carbon tetrachloride vapor. Ninety-five locations were sampled this quarter.

At the end of fiscal year 2002, the Groundwater Protection Program's pump-and-treat stations operated at an annual average rate of 97.5 percent availability. Pump-and-treat stations extract contaminated groundwater, treat the water to remove the contaminants of concern, and then re-inject the treated water back into the ground.

Four additional groundwater monitoring wells will be installed in FY 2003 in the 200 Area.

In the 100 Area, all five *in-situ* redox manipulation (ISRM) re-injections were completed, re-establishing barrier integrity. *In-situ* redox manipulation uses a chemical "curtain" or treatment zone to transform a hazardous chemical in the groundwater into a non-hazardous form. The re-injections refer to re-injecting the barrier chemicals into existing ISRM wells to re-establish the barrier "curtain."



Workers use a Geoprobe drilling apparatus (above) to take vapor samples to test for carbon tetrachloride (below).



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## Spent Nuclear Fuel Project

This quarter, 43 MCOs of spent nuclear fuel were shipped out of K-West Basin, double the total shipped in the previous best quarter. These 43 loads contained more than 202 metric tons of irradiated uranium and nearly 6.5 million curies of radioactivity that were removed from the Columbia River shoreline.

Project personnel cleaned and removed 839 fuel canisters from K-West Basin by the end of FY 2002, nearly 40 percent more than required.

Hanford Site Operations personnel fabricated a total of 1,653 spent fuel baskets by the end of FY 2002, completing more than 75 percent of the total baskets needed. The steel baskets, which are 2 feet high and 22 inches wide, each weigh 500 pounds. Basket fabrication continues ahead of schedule.



*MCOs for spent fuel are made of stainless steel. Each MCO is about 14 feet high and 24 inches wide.*

*The Spent Nuclear Fuel Project reduces the risk to the Columbia River by safely relocating fuel, sludge, debris and water residing in the K Basins to interim storage in the center of the Hanford Site.*

*Most of the spent nuclear fuel stored in the K Basins was irradiated in the now shut-down N Reactor. Before the Spent Nuclear Fuel Project began moving fuel out of the K Basins in December 2000, 105,000 N Reactor fuel assemblies resided there. The amount of radioactivity, measured in curies, was approximately 55 million curies.*

*Spent fuel is placed in baskets and then loaded into multicanister over-packs, or MCOs. The MCOs are lifted out of the basin water, dried in the Cold Vacuum Drying Facility and placed in dry interim storage in steel tubes in the Canister Storage Building in Hanford's central plateau.*



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## Spent Nuclear Fuel Project

Forty-three MCOs with full quality inspections were received. The project now has more than 65 percent of the total MCOs needed.

The Canister Storage Building accepted the first two loads of Shippingport Reactor spent nuclear fuel from T Plant. The first four loads of light water reactor spent nuclear fuel from the 324 Building were relocated to the Interim Storage Area next to the Canister Storage Building.

The Spent Nuclear Fuel Project passed the third annual quality assurance audit by the Department of Energy's National Spent Nuclear Fuel Program with "effective" ratings in all categories.



*Moving fuel canisters from K-West Basin results in empty fuel canister racks, as shown above.*



*T Plant personnel began moving Shippingport Reactor fuel this quarter.*



*A load of Shippingport fuel arrives at the Canister Storage Building.*

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## Environmental Restoration Along the River

The Environmental Restoration Contractor Team, led by Bechtel Hanford, Inc, completed drum removal and excavation at the 618-4 burial ground. Mobilization and site preparation for the nearby 618-5 burial ground is complete. Mobilization and site preparation for remedial action work is also underway at the K Reactor area. This quarter, nearly 185,000 tons of contaminated material were removed from several sites in the River Corridor and placed in the Environmental Restoration Disposal Facility.

The Environmental Restoration Contractor team completed the Interim Safe Storage “cocooning” of the DR Reactor nearly a year ahead of schedule. Two of Hanford Site’s reactor cores — C and DR — are now safely stored for up to 75 years, awaiting final disposition. Cocooning of three other reactors is underway. As of the end of the quarter, F Reactor is 86 percent complete, D Reactor is 85 percent complete and H Reactor is 39 percent complete.



*The final footprint of the completed DR Reactor safe storage enclosure is 80 percent of the original facility footprint.*



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## What's Next in Restoring the River Corridor?

- Issue a Request for Proposal for the disposition of the residual sodium in the 3718M storage vessel and the 337B Building CRCTA vessel. Up to 500 gallons of residual sodium may remain in these two drained vessels.
- Complete field work for preparing the CRCTA vessel for removing residual sodium.
- Remove, dry and place in storage, approximately 50 more loads of spent nuclear fuel from the K-West Basin.
- Maintain safe work hours record.
- Begin fuel transfers from K-East Basin to K-West Basin.
- Complete construction, installation and Operational Readiness Review of the K-East Basin Sludge/Water System.
- Complete acceptance of all 324 Building light-water reactor spent nuclear fuel, and all 400 Area Training, Research and Isotope (Production) General Atomics (TRIGA) research reactor fuel to the Interim Storage Area next to the Canister Storage Building.
- Dispose of the ion-exchange columns in the 183K vaults.



*The Fuel Transfer System that moves fuel from the K-East to the K-West Basin will be operational in FY 2003.*

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## What's Next in Restoring the River Corridor?

- Complete the accelerated shipment of all remaining 324 Building spent nuclear fuel assemblies and the shipment of the spent nuclear fuel segments and fragments.
- Transfer the 300 Area scope to the River Corridor Closure Contract in FY 2003.
- Complete cleanup at the 618-4 Burial Ground.
- Begin cleanup at the 618-5 Burial Ground.
- Complete removal of the F Reactor Fuel Storage Basin.



*The shutdown K Reactors can be seen from the Columbia River.*



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# Transition the Plateau

## Fast Flux Test Facility

**T**he Fast Flux Test Facility Project continued preparations to drain sodium and remove fuel as part of the shutdown of FFTF. The Closed Loop Ex-vessel Machine (CLEM) Acceptance Test Procedure was completed, which allowed personnel to begin installing the immersion heaters. One of the immersion heaters has been installed in the reactor; the second one is soon to follow. The immersion heaters keep the primary sodium molten during and after the secondary drain process.

Facility personnel repaired the Interim Examination and Maintenance Cell Sodium Removal System equipment and the system is being tested. This system will be used to remove residual sodium from FFTF fuel before it is placed in dry storage.

*Fluor Hanford operator Paul Fernandez inspects one of the immersion heaters in a maintenance glovebox, while health physics technician Bernie St. George (left), also of Fluor Hanford, monitors the level of radiation.*

*The plateau lies near the center of the Hanford Site and includes the 200 Areas and the 400 Area and is the location of Hanford's longer-term missions of waste treatment, storage and disposal operations.*



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## Fast Flux Test Facility

Site Fabrication Services and off-site vendors continue to manufacture components required to repair the solid waste cask, which will be used in transferring the fuel from the FFTF to dry storage.

FFTF personnel removed three liquid inert gas dewars (special vessels used to store liquefied gases) from FFTF and one from the Maintenance and Storage Facility. These moves were the first of several planned activities.

Fluor Hanford's FFTF staff, support personnel and experienced decommissioning subcontract personnel submitted the *FFTF Closure Project Management Plan* to DOE. The plan includes an estimated project cost and schedule through deactivation and demolition.



*FFTF's rigging crew removes a large liquid nitrogen dewar from the inert gas dewar pad.*

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## Nuclear Material Stabilization



*Personnel worked at gloveboxes to stabilize solutions.*

All solutions at the Plutonium Finishing Plant (PFP) were officially “completed” — stabilized — July 29. This Defense Nuclear Facility Safety Board milestone, which eliminated a major risk on the Hanford Site, was completed more than two months ahead of the baseline schedule.

The second set of the 3 metric tons of plutonium-bearing residues was successfully repackaged at PFP, more than six months ahead of schedule. Repackaging prepares the nuclear waste for eventual shipment to the Waste Isolation Pilot Plant (WIPP) for disposal. The Residue Project is ahead of schedule and is now packaging waste that had been scheduled for processing in February 2003.

Several other accelerated decommissioning activities continued in the quarter:

- Demolishing the electrical-pipe-bending shop, on the west side of the PFP complex
- Dismantling the 2715-Z Building
- Demolishing the construction metal shop
- Removing asbestos on the steam line from 241-Z to 2715- Z
- Beginning to remove legacy plutonium in process vacuum systems, duct work, gloveboxes and hoods, and process lines to reduce or eliminate Safeguards-and-Security-protected areas and to protect workers performing follow-on decommissioning and dismantling activities
- Removing large metal storage boxes, an abandoned air tank and wood debris
- Cleaning the construction lay down area.



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## Nuclear Material Stabilization



*Two operators and a radiological control technician seal out a billet can containing plutonium-bearing residues.*

The stabilization of plutonium-bearing polystyrene items (polycubes) resumed during this quarter.

Over 400 items of oxides originally thought to require thermal stabilization and packaging have been selected for discard as a result of investigations into their plutonium content. Fluor Hanford is waiting for approval to process this material, which contains less than 10 percent plutonium. The material will be packaged in pipe overpack containers and shipped to the Central Waste Complex for storage until it is shipped to WIPP.

### An aid to stabilization

Pacific Northwest National Laboratory studied options to remove corrosive chloride salts from high-chloride plutonium oxides destined for stabilization and storage. A test of the recommended chloride-wash process, which uses idle equipment remaining from earlier solutions processing, proved effective and practical in removing the salts. The new wash process will allow the high-chloride plutonium oxide materials to be stabilized more quickly with less worker exposure.



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## Waste Management

### *Spent Nuclear Fuel Support*

Plant personnel continued to prepare T Plant for storing sludge from spent nuclear fuel. T Plant personnel shipped two loads of Shippingport Reactor fuel to the Canister Storage Building. Liner systems were placed in four of the T Plant Canyon cells to store K-Basin sludge. The remaining four cells will be cleared by the end of October.



*Shippingport Reactor fuel is being moved out of T Plant.*

*The Hanford Waste Management Project supports the restoration of the Columbia River Corridor and transition of the Hanford Site central plateau to a long-term operation by managing programmatic Hanford activities related to radioactive solid waste, liquid waste, and cesium and strontium capsules. Activities include retrieval, storage, treatment/processing and disposal.*

### *Transuranic Waste Program*

Waste Management personnel focused on shipping transuranic (TRU) waste from Hanford to WIPP in New Mexico for permanent disposal. This year, Hanford's activities were significantly affected by the changes in waste certification and shipping requirements initiated by the Environmental Protection Agency (EPA), Nuclear Regulatory Commission and the New Mexico Department of Environment. Hanford's TRU waste certification program was changed to comply with the revised requirements, and the program was audited by the EPA and the DOE Field Office in Carlsbad, New Mexico to ensure compliance with the new requirements.



*A shipment of transuranic waste is on its way to WIPP in New Mexico.*

Hanford was the first DOE site to successfully implement and become re-certified under the new requirements, which allowed shipments to WIPP to continue. Certification activities are performed at several Hanford facilities including the Central Waste Complex, Waste Receiving and Processing Facility, T Plant, Waste Sampling and Characterization Facility and the PFP. Since its first shipment on July 12, 2000, Hanford has sent 12 shipments of TRU waste to WIPP by the end of FY 2002.

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*The 242-A Evaporator EC-1 Condenser was melted down and recast into shield blocks.*

## *Waste Management*

In August, a new contract for the non-thermal treatment of Hanford mixed low-level waste was let with Allied Technology Group, Inc. The first shipments under the new contract were sent to Allied Technology Group in Richland, Washington, and this waste will be treated and returned beginning in October. Additional shipments of debris and radioactive lead solids are planned during FY 2003.

The Hanford Waste Management Project obtained approval and funding to demonstrate a thermal desorption process on Hanford waste. This demonstration, conducted under the broad spectrum contract (a consolidated procurement for waste-treatment services, available for use by DOE sites), will treat about 150 drums of thermally treatable waste, mostly lab-packed organic liquids.

The 242-A Evaporator EC-1 Condenser, shipped to Duratek's Bear Creek Facility at Oak Ridge, Tennessee, was melted down and recast into shield blocks for controlled reuse in DOE projects in high-energy physics.

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## **What's Next in Transitioning the Plateau?**

- Drain the three secondary sodium loops to the Sodium Storage Facility at FFTF.
- Prepare to drain the secondary side of the intermediate heat exchangers at FFTF.
- Complete testing the upgrades to the Interim Examination and Maintenance Cell Sodium Removal System at the FFTF.
- Continue accelerated deactivation and decommissioning activities in accordance with the DOE's plans to accelerate decommissioning the PFP complex.
- Submit the Documented Safety Analysis (Health and Safety Plan) to the Department of Energy Richland Operations Office (DOE-RL) for decommissioning the 232-Z Incinerator.
- Implement a remote canister monitoring system in PFP that will significantly reduce labor costs, limit radiation dose and enhance safeguards for the stabilized plutonium from PFP.
- Continue transferring Shippingport Reactor fuel from T Plant to the Canister Storage Building.
- Complete the 242-A Evaporator campaigns on tank waste scheduled for November and December.
- Continue TRU waste shipments to WIPP.
- Continue preparing to retrieve buried TRU waste in FY 2003.
- Complete the B Plant and PUREX roof installation projects.



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# Prepare for the Future

## Asset Transition

**D**uring FY 2002, the Fluor Hanford Asset Transition organization changed its focus from economic transition and job creation to transfer of assets from the Hanford Site to the local community through the Tri-Cities Asset Reinvestment Company (TARC), a subsidiary of the Tri-City Industrial Development Council (TRIDEC). Fluor continued to play a key role in the systematic transfer of surplus Hanford assets — heavy equipment, photographic-lab equipment, mechanical engineering lab equipment, drilling equipment and surplus drill yard and electrical yard items — to local companies and regional businesses. Revenues generated were used to help establish an incentive fund for business and industrial retention and recruitment.

The TRIDEC incentive fund was used to help attract a major pipe-distribution center to Richland, Washington. Preliminary reports from the state of Washington and TRIDEC indicate that the company will construct a large distribution center and create 130 new jobs in the area.

*Asset Transition is a function of Fluor Hanford that maximizes the transfer of usable, but excess government assets to the private sector.*

*Workers examine a refrigeration machine from the Hanford Site photo lab. The unit was excessed as part of the Asset Transition program.*





## Asset Transition

Other activities for Asset Transition included the following:

- Obtaining DOE-RL approval on 22 high-reuse-value assets. Of the 200 total items to be removed by 2006, 77 had been removed by the end of FY 2002.
- Removing, and selling at auction, drill pipe from the 810 and 100 N yards. The sale produced substantial revenue for TARC's economic diversification reinvestment.
- Providing support for FFTF's plans to excess two backup diesel generators.
- Working with Fluor Global Location Strategies, as the firm completed several studies on economic development in the Tri-Cities.
- Removing a crane from the 400 Area and transporting it to TARC in Pasco, Washington.
- Removing water tanks used in drilling wells in the 200 Area and stainless steel tanks from the 2101-M Building.



*Workers in the 810 drill yard excess drilling pipe for transfer to the Tri-Cities Asset Reinvestment Company.*

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## Volpentest HAMMER Training and Education Center

The DOE evaluation team for the Voluntary Protection Program (VPP) awarded Star Status to the HAMMER and Hanford Training organization in September. Only 500 businesses nationwide have achieved Star Status, given in recognition of the safety covenant shared by the workforce and management at the Star site. The first training organization in the nation to receive the prestigious award, HAMMER and Hanford Training are one of six Fluor Hanford projects to receive the DOE VPP Star. The Hanford Site has seven of these awards, more than any other DOE site in the nation.



*The Volpentest Hazardous Materials Management and Emergency Response (HAMMER) Training and Education Center is a one-of-a-kind worker-safety training facility. HAMMER features the hands-on use of realistic props and settings to save lives, reduce injuries, protect the environment and increase worker productivity. The facility comprises an 80-acre main campus and a 10,000-acre law enforcement campus. The center is dedicated to the Tri-Cities' community leader and training advocate, Sam Volpentest.*

*Harry Pettengill of DOE Headquarters presents the VPP flag to DOE-RL's Paul Kruger.*

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## HAMMER

Since it opened its doors in September 1997, HAMMER has recorded 137,090 Hanford student days (the number of days Hanford employees train at HAMMER). Hazardous waste classes, initial and refresher courses for basic medic first aid and respiratory protection, crane and rigging classes, and sessions for radiation workers and nuclear criticality are some of the training courses regularly held for Hanford workers. HAMMER also trains non-Hanford workers in a variety of subjects that concur with its mission. The number of non-Hanford student days at HAMMER has grown, and when combined with Hanford student days for FY 2002, the student days have increased 14 percent over FY 2001.

To avoid down-time or work stoppages because of untrained workers, HAMMER adds “just-in-time” special-release classes for Hanford workers. These classes support DOE-RL, Fluor Hanford, Bechtel Hanford, Inc., CH2M HILL Hanford Group and Fluor Federal Services.

HAMMER hosted its first rail-industry class, conducted by the Burlington Northern Santa Fe (BNSF) Railroad. The Radiological Fundamentals class prepared BNSF employees for transporting radiological materials. BNSF plans on holding several more classes at HAMMER, as its role in the shipment of radioactive materials increases.



*Crane and rigging classes are among the courses regularly held at HAMMER for Hanford workers.*



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## HAMMER

In the area of Homeland Security, HAMMER hosted the following classes this quarter:

- Bio-terrorism responder training for the 10th Weapons of Mass Destruction Civil Support Team of the Washington Army National Guard
- Hazardous materials technician class for the Hanford Fire Department, mutual-aid fire departments and federal agencies, conducted by the Emergency Response Training Institute, a not-for-profit company comprising instructors from the Seattle Fire Department
- International and domestic border security training classes and international first-responder classes conducted by Pacific Northwest National Laboratory.



*Members of the 10th Weapons of Mass Destruction Civil Support Team of the Washington Army National Guard participate in bio-terrorism responder training.*

## What's Next for the Future?

- Plan for a major decontamination and decommissioning training program featuring standardized and customized curricula, hands-on simulations, and mock-ups for Hanford Site cleanup. The program will support the Central Plateau Remediation Project and the River Corridor cleanup work.
- Work with the Occupational Safety & Health Administration (OSHA) and the Northwest Public Power Association to present an OSHA 315 Tower Safety class. Tentative plans include constructing a communications tower to facilitate the hands-on portion of the class.

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## Support and Services

**H**anford Site Operations (HSO) received a “Superior Star” award from DOE Headquarters at the VPP National Conference in Orlando. HSO received this recognition for being the top Maintenance and Services group in the DOE VPP Star program, demonstrating improvement in its infrastructure function in the areas of occupation illness and injury rates from FY 2001 to FY 2002, employee involvement in safety, and community outreach (mentoring) of VPP.

The Fluor Hanford Facility Evaluation Board gave HSO a “satisfactory” rating during an evaluation this past summer that covered virtually every discipline of plant operation. The rating indicates that the project’s Integrated Safety Management System is effectively implemented. Attention was focused on the 222-S Laboratory Complex, Day & Zimmermann Protection Technology Hanford and the recently established Project Maintenance Center. The performance on this assessment was the best that these organizations had ever attained.



As a result of greater efficiencies in fabricating Mark 1A and Mark IV storage baskets, the MCO Basket Project saved more than \$2 million, and turned that money back to the Spent Nuclear Fuel Project to support cleanup. Spent nuclear fuel is loaded into the Mark IA and Mark IV storage baskets and then into the MCOs.

*Mark IV storage baskets are ready to be sent to the Spent Nuclear Fuel Project.*

*Hanford Site Operations provides services to the Site and other Hanford contractors. These services include the following: analytical services, information resource management, utilities, energy and water conservation, telecommunications, fire systems and emergency response, safeguards and security, roads and grounds, crane and rigging, fabrication and calibration services, maintenance services, sanitary waste disposal, asset disposition, training and property management.*

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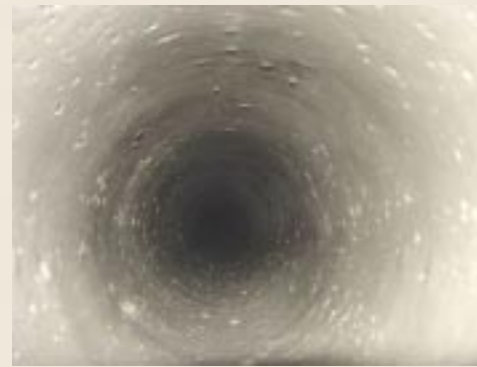
Among the infrastructure repair and maintenance projects conducted during the quarter were the following:

- At the 312 Building, workers installed two new pumps and motors, associated piping modifications, a new electrical service and some associated local controls to replace an existing, unreliable pump.
- At the Hanford Meteorological Station, workers designed and installed a replacement water line that supplies water for fire protection.

Using new pipe-relining technology, Landlord Projects cleaned and relined approximately a-third-of-a-mile of 8-inch cast iron piping in the 200 West area to return the pipe's flow capacity for potable water to acceptable levels. Cleaning and relining this pipe, instead of replacing it, resulted in a 40 percent cost avoidance for the project and increased the flow rate to nearly three times that of the unlined pipe.



*Pipe before*



*Pipe after*

Radiological control technicians (RCTs) are getting opportunities to practice abnormal-event response in a mentoring atmosphere through the Radiological Upset Drill Program. The program allows supervisors to coach RCTs on fundamental response to abnormal radiological conditions in short-duration scenarios that do not affect normal day-to-day operations. The program identifies areas for improvement and lessons learned. Emergency Preparedness is working with the Central Radiological Control Organization and Waste Management Project to increase proficiency of the RCTs and Hazards Assessors in their response to emergencies. A pilot program has been initiated at T Plant.



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The current Washington State Department of Labor and Industries' Compliance review recognized the Hanford Fire Department's commitment to maintaining its apprenticeship program and continuing to build a skilled and qualified diverse workforce. The Hanford Fire Department's apprenticeship program successfully passed the review with only minor language changes suggested.

*Two participants in the Hanford Fire Department apprenticeship program practice fire hose technique.*

## What's Next for Support and Services?

- Install a fresh-water tank system and a state-approved septic holding tank at the Yakima Barricade.
- Issue the Notice to Proceed on the Narrowband Radio Migration Project. This project will modify or replace existing radio systems to ensure the Hanford radio systems comply with the National Telecommunication and Information Administration Federal Narrowband Mandate by January 1, 2005.
- Continue to excess the spare parts inventory from the 2101M and 400 Area warehouses. The inventory of approximately 3,000 items has an original acquisition value of almost \$450,000.

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# Environment, Safety and Health

**F**luor Hanford's safety record demonstrates the effectiveness of the Integrated Environment, Safety and Health Management System. For FY 2002, Fluor Hanford achieved an OSHA recordable case rate of 1.45 — in other words, there were 1.45 injuries per 200,000 hours worked, significantly below the average of 2.3 for the DOE complex.



*An automated external defibrillator rests in an easily accessible case at PFP.*

Demonstrating their commitment to safety, employees at PFP considered the following factors: accelerated work scope, aging worker population and the availability of easy-to-use automated external defibrillators (AEDs). They suggested that AEDs be made available for use at Hanford Site facilities for trained workers to treat potential

victims of sudden cardiac arrest. This quarter, Fluor Hanford's Environment, Safety and Health (ES&H) organization proactively assisted the Projects by supplementing emergency response equipment with AEDs. The Hanford Fire Department provides initial and refresher training to designated volunteers or responders.



*PFP employees, from left, Mike Esparza, Pat Jenkins and Mike Luckman train on the AED. The "patient" is Dave Messinger.*

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In another example of Fluor Hanford's commitment to safety, electricians at the 222-S Analytical Laboratories wore "flash suits" while taking electrical current readings on exhaust-fan circuits. The arc suits and switching hoods are personal protective equipment that provide protection during electrical maintenance work on energized circuits.

Fluor Hanford completed over eight months without a "day-away-from-work injury," and achieved 7.5 million safe work hours in FY 2002. This safety performance earned recognition from Washington State Governor Gary Locke, Lieutenant Governor Brad Owen and the Washington State Department of Ecology.

The Fluor Hanford Radiation Protection Organization completed the preparations for radiologically releasing the Energy Northwest WNP No.1 and 4 sites, the property currently owned by DOE that tentatively will be leased by a gas-fired electrical generator. The release process, performed in compliance with DOE Order 5400.5, included writing an Historical Site Assessment, using a conceptual contamination transfer model, collecting field measurements from *in-situ* gamma spectroscopy and soil samples for laboratory analysis and preparing an Authorized Limit request. The scope of this work has assisted in formulating the process for the future radiological release of the Hanford Reach National Monument.



*Electricians Dave Greiner and Bruce Pittner of the 222-S Analytical Laboratory work on a high-energy job in their protective "flash" suits.*



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